

# Chapter 9

## Real-Estate Market Impacts of TOD

### TOD and Real-Estate Markets

If transit investments create benefits, real-estate markets tell us. As long as there is a finite supply of parcels around stations, those wanting to live, work, or do business near transit will bid up land prices. The benefits of being well connected to the rest of the region (i.e., being accessible) get capitalized into the market value of land. As the cliché goes, rail-served properties enjoy good “location, location, location”: residents can more easily reach jobs and shops; more potential shoppers pass by retail outlets; and for employers, the laborshed of workers is enlarged. For some, stress reduction is perhaps also part of the attraction of being near transit. A developer of transit-based housing in St. Louis remarked: “The MetroLink station adds value to the project as part of the ‘no hassle’ lifestyle we are selling.”<sup>1</sup>

Because the benefit conferred by being near transit is improved accessibility, looking at the land-value premiums is a good way to gauge the benefits of TOD. While research findings are varied, most of the evidence suggests that being near transit enhances property values and rents. At the Orenco Station in Hillsboro, Oregon, absorption of housing averaged eight units per month in 2001, and prices were running 20% to 30% above the area’s average, according to brokers with Costa Pacific Homes, one of Orenco’s homebuilders.<sup>2</sup> Near the Mockingbird light-rail station in Dallas, office and

retail space today rent for \$40 per square foot, some 40% above market rates. Even higher premiums have been recorded for office and retail space near Washington Metrorail stations in Arlington, Virginia, and Bethesda, Maryland.<sup>3</sup> Rising land values have occurred not only in rail-served edge cities but also transitional inner-city neighborhoods. In the District of Columbia, land prices near the U Street and 14th Street Metrorail Station, in a predominantly minority neighborhood known for its jazz clubs and night-time entertainment, have nearly doubled in the past 3 years.

The idea that transit confers benefits to local real-estate markets is hardly new. After all, some of the toniest neighborhoods developed at the turn of the 20th century—Shaker Heights in Cleveland, Chestnut Hill in Boston, Roland Park in Baltimore, and Riverside near Chicago—were served by streetcar lines. While the fortunes of neighborhoods skirted by rail corridors suffered during the ascendancy of automobiles and freeways during the middle and latter parts of the century, in the 21st century, the tables once again appear to be turning. In Dallas, San Jose, Portland, Northern Virginia, Northeast New Jersey, and other rail-served settings, residential properties within an easy walk of light-rail stops are once again hot commodities. Many are fully leased and quite a few command top-dollar rents.

## **Evidence on Market Performance**

Most studies on the land-value benefits of transit have evaluated the influence of proximity to or distance from stations, not whether a parcel of land is in a TOD. Research findings on the effects of proximity to transit on land values are not very consistent in part because impacts vary depending on severity of traffic congestion, local real-estate market conditions, swings in business cycles, and other factors. Some of these issues are addressed further in this chapter.

Below, empirical evidence on the land-value and market-performance impacts of transit systems is reviewed, first for residential housing and then for commercial properties. Relatively little research has been conducted on the land-value impacts of transit on other uses, like industrial activities; however, this should not be a concern since such uses are not particularly prominent in TODs.

### ***Residential Properties***

Most, although not all, studies of transit's impacts on residential properties have recorded premiums or net benefits. Studies over the past two decades show average housing value premiums associated with being near a station (usually expressed as being within  $\frac{1}{4}$  to  $\frac{1}{2}$  mile of a station) are 6.4% in Philadelphia, 6.7% in Boston, 10.6% in Portland, 17% in San Diego, 20% in Chicago, 24% in Dallas, and 45% in Santa Clara County.<sup>4</sup>

The type of transit technology has some bearing on land-value premiums. A study of experiences in the San

Francisco Bay Area found that heavy-rail systems conferred the highest capitalization benefits to single-family housing because of faster speeds, more frequent services, and wider spatial coverage than light-rail and commuter-rail systems.<sup>5</sup> The study found that for every meter closer a single-family home was to a BART station, its sales price increased by \$2.29, all else being equal. Alameda County homes several blocks from BART stations sold, on average, for 39% more than otherwise comparable ones 20 miles from the nearest station. In the case of light-rail systems, however, capitalization benefits (i.e., value-added) were far smaller, and, in some instances, single-family homes within 900 feet of a station actually sold for less because of transit's "nuisance effect." A study of Atlanta's MARTA system suggested impacts also varied by type of neighborhood: transit accessibility increased home prices in Atlanta's lower-income census tracts but decreased values in upper-income areas.<sup>6</sup>

It is not hard to find conflicting signals on transit's residential property impacts. A study of Portland's MAX light-rail system found positive land-value effects only within a 500-meter walking distance of stations.<sup>7</sup> A different study of both light-rail-served Portland and heavy-rail-served San Francisco Bay Area suburbs found residential property values were lower within a few blocks of rail stops than five or six blocks away.<sup>8</sup> A study of single-family sales prices found no disamenity effect when homes were within 300 meters of BART stations.<sup>9</sup> The same study, however, found a huge effect for commuter-rail services: in 1990, homes within 300 meters of the Caltrain stations

sold at an average discount of \$51,000. It seems plausible that whereas disamenity effects exist from being “too close” to rail transit in suburban settings, in fairly dense, mixed-use environments (with Manhattan as an extreme), ambient noise levels are so high and streets are so busy that there are no perceived nuisances from living within a block or so of a rail stop. The alignment also comes into play: because of noise levels, elevated structures depress residential values the most, whereas the effects of below-ground systems are often negligible.

### ***Commercial Properties***

Evidence on land-value benefits exists for office and commercial-retail parcels near heavy-rail systems in the Washington (D.C.) Metropolitan Area, the San Francisco Bay Area, and greater Atlanta.<sup>10</sup> Comparable or even larger premiums have been found for commercial properties near light-rail stations in Santa Clara County, California, and suburban Dallas.<sup>11</sup> Even bus malls, experience shows, confer substantial benefits on commercial properties. Office rents along Denver’s downtown transit mall, for example, were 8% to 16% higher than comparable space off the mall in late 2002. Sixty-percent premiums were found for retail shops on the mall relative to the typical downtown retail outlets.<sup>12</sup>

Most evidence on commercial property comes from heavy-rail systems, and, as in the case of residential properties, it is not altogether consistent. An early study of BART found no evidence that rail’s presence increased commercial property rents around a suburban station and two inner-city stops.<sup>13</sup> The absence of appreciable gains could have been due

to the fact that, at the time, BART was too new for meaningful accessibility benefits to have accrued, along with the fact that few zoning changes had been introduced. A study in Washington, D.C., found evidence of benefits to commercial properties in anticipation of heavy-rail services: property values fell by 7% for every 10% increase in distance from a Metrorail station, up to a radius of 2,500 feet.<sup>14</sup> No follow-up work was conducted to see if value gains held over time, although numerous subsequent case studies suggest that Metrorail has materially benefited nearby commercial properties.<sup>15</sup> Two studies of MARTA heavy-rail service reached opposite conclusions on impacts to commercial properties. One found that offices within 1 mile of highway interchanges commanded office rent premiums; however, those within a mile of MARTA stations typically leased for less than comparable space farther away.<sup>16</sup> Another concluded that commercial properties were “influenced positively by both access to rail stations and policies that encourage more intensive development around those stations.”<sup>17</sup>

Although theory suggests light-rail systems confer smaller benefits to commercial properties, some researchers have reported otherwise. A study of the DART system compared differences in land values of “comparable” retail and office properties near and not near light-rail stations.<sup>18</sup> The average percent change in land values from 1994 to 1998 for retail and office properties near DART stops was 37% and 14%, respectively; for “control” parcels, the average changes were 7.1% and 3.7%, respectively. For retail uses, this study

suggested a value-added premium of 30%. Anecdotally, the authors noted that North Park, the only regional mall served by DART, generally outperformed other malls in the Metroplex area, remaining 100% occupied during the 1994-to-1998 period while rents increased 20%. A follow-up study found office properties increased in value 53% faster than control sites from 1997 to 2001; however, no premiums were recorded for retail properties over this period.<sup>19</sup>

Several California studies of light rail's impacts on commercial properties have been more rigorous in their research designs; however, findings were generally inconclusive. A study of Santa Clara County's light-rail system found that properties within ½ mile of stations commanded premiums, although those that were ¼ to ½ mile away were worth even more.<sup>20</sup> Compared with other properties in the county, the estimated monthly lease premium within ¼ mile of a station was 3.3 cents per square foot, and for properties ¼ to ½ mile away, it was 6.4 cents per square foot. Sales premiums of \$8.73 and \$4.87 per square foot, respectively, were found, though models of sales values had poorer statistical fits.

### ***TODs and Land-Value Premiums***

The studies cited above looked at the effect of proximity to transit stations on land values and rents as opposed to the affects of TOD per se. Few studies have looked specifically at differences in rents and land values between projects that are in TODs and those that are not. Studies that have looked at differences have often used matched-pair comparisons. In general, experiences show that mixed-

use projects in walking-friendly settings served intensively by transit produce healthy real-estate results.

A study of experiences in the San Francisco Bay Area in the mid-1990s found that multifamily units within TODs commanded higher rents than otherwise comparable projects not within TODs. Besides being near transit, these multifamily projects also had fairly high densities (over 50 units per net acre) and featured convenience retail shops and various pedestrian amenities, thus taking on the attributes of a compact, mixed-use TOD. In 1994, rents for one-bedroom units near the Pleasant Hill BART station were \$1.20 per square foot compared with an average of \$1.09 for similar projects (in terms of size, age, and amenities) that were in the same geographic submarket but away from BART. Two-bedroom units near the Pleasant Hill Station leased for \$1.09 per square foot compared with \$0.94 per square foot for comparable units away from BART. On average, rents for one- and two-bedroom units in TOD apartments in the East Bay were 10% to 15% higher than non-TOD units in the same municipality that were otherwise comparable.

At Dallas's Mockingbird Station, TOD residential rents were going for \$1.60 per square foot per month in mid-2003; other comparable nearby properties not served by transit were getting \$1.30, or 20% less. In Englewood, Colorado, apartments rented at CityCenter—a transit-oriented village with civic uses, a cultural and performance center, and retail—are more than twice as expensive as comparable units elsewhere in the city. CityCenter's Class A office space is also leasing at a premium: gross annual

lease rates of \$21 to \$25 per square foot in mid-2002 compared with \$13.50 to \$17 per square foot for Class A space elsewhere in the city.<sup>21</sup>

Moreover, CityCenter's office occupancy rate is close to 100%, compared to 90% for the Denver metropolitan area. The project's retail sector is also outperforming its competitors: annual rents for stores averaged \$18 to \$20 per square foot in 2002 versus \$8 to \$14 per square foot for the city of Englewood. About 90% of CityCenter's retail space was leased and occupied in mid-2002 compared with a citywide average of 80%. Another good example of TOD's added value in the Denver region is 16 Market Square in Denver's central business district (CBD). The project lies next to the Market Street Station, Denver's "100% transit location," where all of the city's downtown-bound bus lines converge. In late 2002, 16 Market Square—with ground-floor retail and five stories of renovated office space—enjoyed a 60% premium over comparable downtown office space. Also, its commercial space was 100% leased; no other commercial building in downtown Denver can lay such a claim.

What these experiences tell us is that while proximity to good-quality transit is an important trait of TOD, this is not the only factor that adds value. When combined with higher-than-typical densities, consumer retail and services, and pedestrian amenities, proximity to transit can confer land-value benefits that are well above those of competitive markets. TOD's synergy of proximity, density, mixed uses, and walking-friendliness, under the right conditions, gets expressed through geometric gains

in property values and overall real-estate market performance.

### ***Joint Development and Land-Value Premiums***

What about the joint development projects? Do projects physically linked to transit stations, like air-rights towers or passageway connections, out-perform other markets? A comprehensive study of transit joint development projects in the Washington (D.C.) Metropolitan Area and Atlanta suggested that they do.<sup>22</sup> The study of five rail stations in Washington, D.C., and Atlanta over the 1978-to-1989 period found jointly developed projects were better performers: in addition to average rent premiums of 7% to 9%, physically integrated projects tended to enjoy lower vacancy rates and faster absorption of new leasable space. On average, joint development projects added more than \$3 per gross square foot to annual office rents over the 1978-to-1989 period. Moreover, Atlanta's and Washington's joint development projects, the study found, were generally "better" projects (i.e., they were architecturally integrated, they enjoyed better on-site circulation [of both people and automobiles], and they made more efficient use of space through resource-sharing such as shared parking). In addition, the research showed that average office rents of transit joint development projects rose with increases in systemwide ridership. Other matched-pair studies of joint development in the Washington (D.C.) Metropolitan Area have reported comparable rent premiums of up to 10%.<sup>23</sup>

A matched-pair comparison between projects near rail stations and freeway

interchanges further substantiated these research findings.<sup>24</sup> Office projects in Atlanta's and Washington's TODs showed modest rent premiums over their freeway-oriented counterparts. Premiums were attributed, in part, to rail-served neighborhoods being more pedestrian-friendly and having more net leasable space (due mainly to lower parking requirements). Whether adjacent commercial properties are physically integrated with rail stations, such as through air-rights development or direct passageway connections, was also found to have a bearing on market performance. Evidence likewise shows that renovation of stations improves the market performance of retail both within and close to stations. A recent study of older neighborhoods and business districts in the Northeast found rail-station rehabilitation was positively associated with increases in retail rents and surrounding commercial property values, with benefits increasing with city size and urban densities.<sup>25</sup>

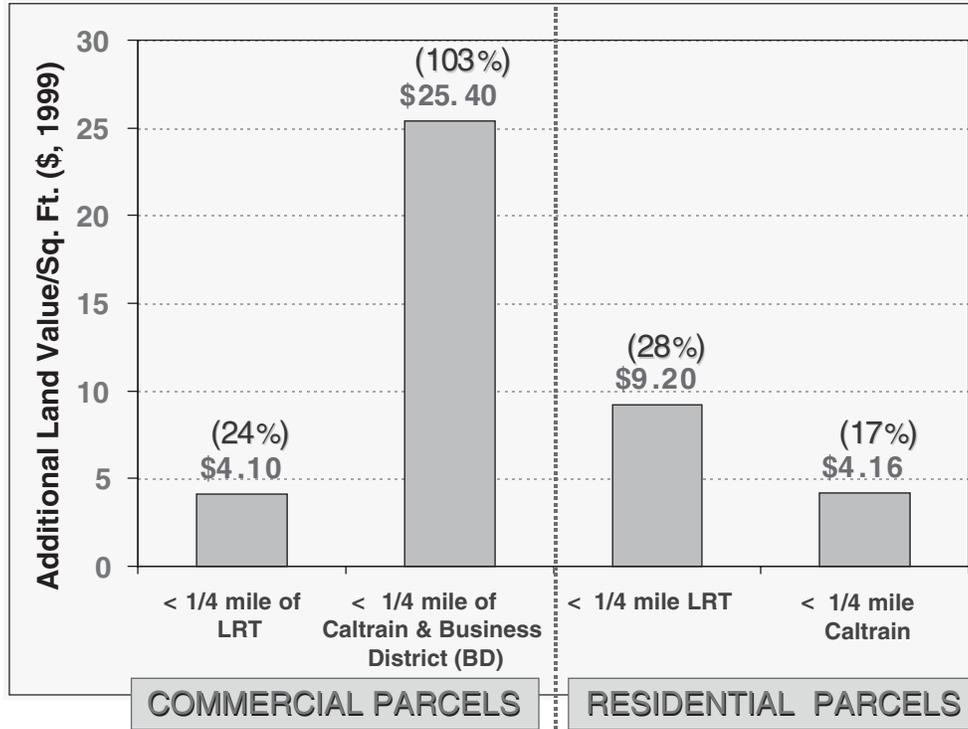
### **The Importance of Business Cycles, System Maturation, and Timing**

More studies on the link between proximity to transit and land values have been carried out in the San Francisco Bay Area than anywhere else. A study led by John Landis of Bay Area real-estate market conditions in the early 1990s found that for every meter that a BART-served Alameda County home was closer to a BART station, its 1991 sales price rose by \$2.39, all else being equal.<sup>26</sup> However, no premium was found in the city of San Jose, and, in fact, the study suggested that there was a disbenefit associated with being near light rail: "Transit in San Jose actually *takes away* value from homes that are

located within reach of its stations."<sup>27</sup> Statistically, homes within 300 meters (a little less than  $\frac{1}{5}$  mile) of a light-rail station sold for \$31,424 (in 1990 currency) less than homes more than 300 meters away, all else being equal.

The Landis study from the early 1990s stands in marked contrast to several recent studies that have recorded positive and appreciable premiums associated with being near light rail in both the city of San Jose and Santa Clara County as a whole.<sup>28</sup> A study by Robert Cervero and Michael Duncan examined relationships in 1999, when Santa Clara County's economy was on a roll, using land-sales data from the county assessor's office to study the effects of proximity on single-family homes, rental properties, and condominiums. Hedonic price models, based on multiple regression estimation, were used to net out the effects of proximity to transit from other factors that influence land values.<sup>29</sup> This study found that in 1999 substantial benefits accrued to residential parcels within a  $\frac{1}{4}$ -mile distance of a rail station, whether it was light rail or commuter rail (see Figure 9.1). Large apartments that were within a  $\frac{1}{4}$ -mile distance of light-rail stops, for example, commanded a premium of around \$9 per square foot. Compared with parcels that were within 4 miles of a light-rail station, this translated into an overall land-value premium of 28%.

What explains the huge difference in recorded land-value impacts between 1991 and 1999? There are four likely reasons: condition of the regional economy; levels of traffic congestion; system maturation and extensiveness; and institutional commitments to TOD. The



**Figure 9.1. Commercial and Residential Land-Value Premiums in Santa Clara County, 1999.**

Sources: R. Cervero and M. Duncan, "Benefits of Proximity to Rail on Housing Markets: Experiences in Santa Clara County," *Journal of Public Transportation*, Vol. 5, No. 1 (2002): 1-18; and R. Cervero and M. Duncan, "Transit's Value Added," *Urban Land*, Vol. 61, No. 2 (2002): 77-84.

point on the business cycle when land-value impacts are measured probably has a lot to do with how much of a premium is recorded, if any. In 1990, the year for which the Landis study measured no impact, the Bay Area was in the trough of a deep recession; therefore, little value was associated with being near transit. In fact, so many people were out of work that traffic congestion had almost disappeared (one of the few benefits of economic downturns). By the late 1990s, when Cervero and Duncan gauged impacts, the Bay Area's economy and real-estate market were red hot on the heels of the dot-com boom. Traffic congestion was as bad as ever, revealed by public opinion polls that identified gridlock as the number-one local problem

in the minds of Bay Area residents. In 1999, in fact, the Bay Area was ranked as the nation's second most congested region by the Texas Transportation Institute, and Santa Clara County was the most congested of the region's nine counties.<sup>30</sup> Under these conditions, being near transit was a bonus.

While the macro-economy might have been an overriding factor influencing the degree to which land-value premiums existed, another plausible explanation is system maturation. In 1991, Santa Clara County's light-rail system was in its infancy, providing service over 21 track miles; by the late 1990s, it was firmly entrenched in the local transportation scene, covering

nearly 30 track miles and offering more frequent services. Ten years into service, the light-rail system was beginning to take on more of the characteristics of a network as opposed to a single line. It must be remembered that transit has to compete with the private automobile, which operates on extensive hierarchical networks of local roads, collectors, highways, and freeways. Such networks provide high levels of connectivity, or accessibility. And, of course, it is enhanced accessibility that drives up property values around rail stations. Only when transit begins to mimic the network attributes of its chief competitor, the automobile-highway system, will accessibility improvements be significant enough to register through real-estate transactions. This was not the case in 1991 when the Landis study was conducted, but it was far more the case in 1999 when the Cervero and Duncan study looked at conditions.

Another explanation could be better institutional support. In the early 1990s, VTA had no in-house program aimed at promoting TOD and joint development. By the late 1990s, the agency was very active in both areas, having hired a full-time staff member who worked closely with developers, industry, and public agencies in building a coalition to advance TOD. These efforts paid off, for few areas of the United States matched the amount of development that took place around light-rail transit during the boom years of the late 1990s in Santa Clara County. Between 1997 and 1999, some 4,500 housing units and 9 million square feet of commercial-office floor space were added within walking distance of the only recently opened 8-mile Tasman West corridor.

Exorbitant housing prices at the time—in 2000, the median single-family home in the Silicon Valley cost \$617,000, an 87% jump from 5 years earlier—created a ready-made market for small, more affordable units near light-rail stops.<sup>31</sup> Among the instruments successfully introduced by local governments to leverage TOD were tax-exempt financing, public assistance with land assembly, and overlay zones that permitted higher densities than the norm.

Of course, the various prerequisites to land-value premiums reviewed in this section are co-related—traffic congestion spurred more rail services and TOD institutional support. In 1991, the year in which Landis measured impacts, these conditions did not exist. The degree to which TOD yields benefits, it would appear, has a lot to do with timing and at what point along the business cycle studies are carried out. Moreover, benefits are also not automatic. They require proactive measures on the part of local governments to create TODs that allow the value-added opportunities of rail investments to be more completely fulfilled.

### **Leveraging Transit's Added Value Through Proactive Planning: The San Diego Experience**

This last point (i.e., the importance of proactive government support for TOD toward reaping land-value benefits) is underscored by experiences in San Diego. When it opened in 1981, the 16-mile San Diego Trolley system—with service from downtown San Diego to the Mexican border at Tijuana—was a huge ridership success. Within 2 years of its opening, trains were so full that the

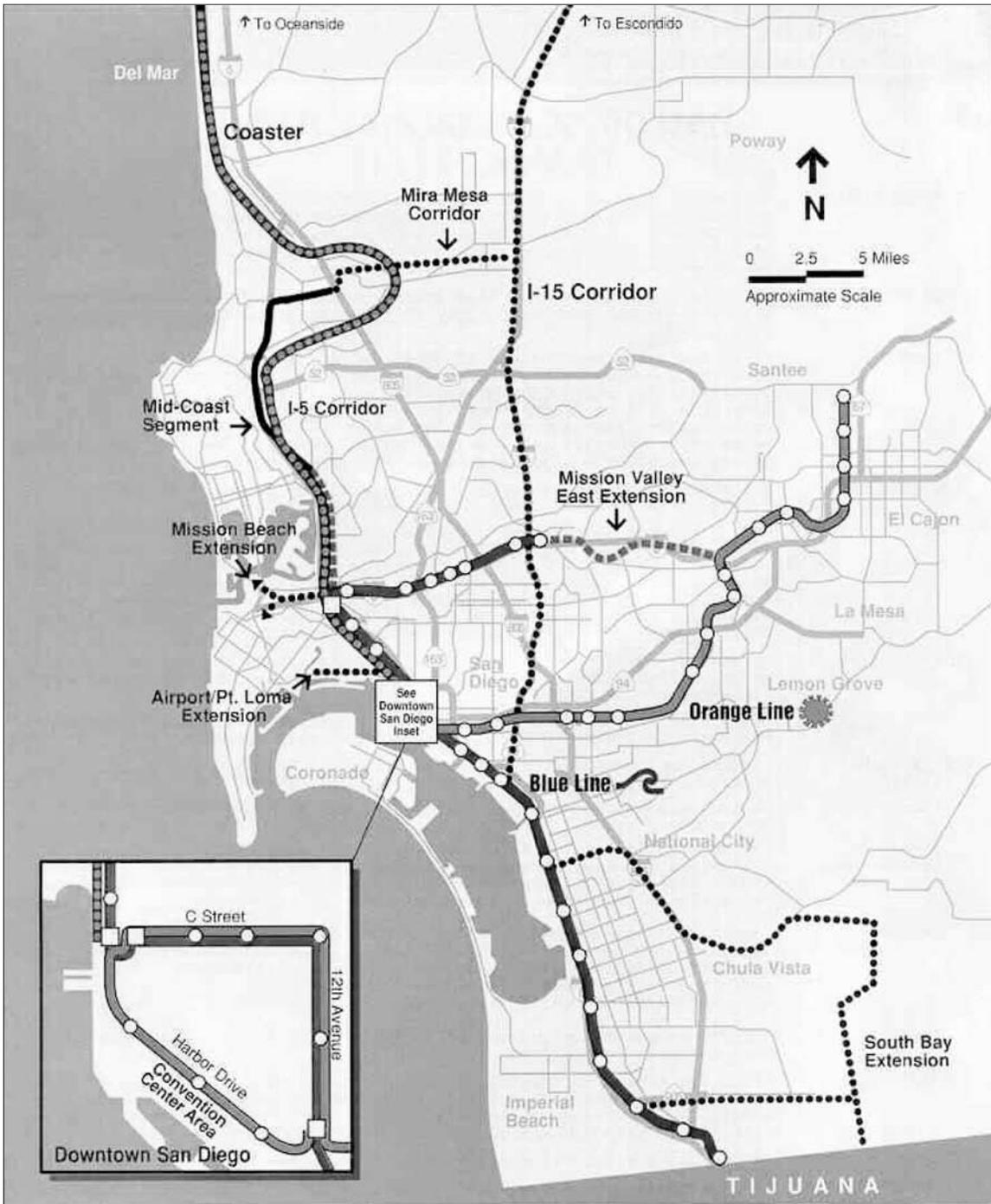
system was recovering 95% of its operating costs, an unprecedented achievement in the U.S. light-rail transit industry. (Map 9.1 shows San Diego's existing and planned rail transit network.)

In terms of land-use changes and TOD, however, the "Tijuana Trolley" (i.e., the southern Blue Line [or South Line] on Map 9.1) has hardly been a success. No notable developments have occurred along the Southern Blue Line over the past two decades, nor should have they been expected. For this first leg of the Trolley system, funded solely with local monies, the overriding objective was right-of-way and construction cost minimization. The South Line operates on disused freight track that abuts sagebrush and an odd mix of warehouses, factories, a military complex, and various automobile-oriented uses. Moreover, the South County area was not "where the action was." Employment has barely increased in this part of San Diego County since 1980. Accordingly, transit was not poised to induce appreciable land-use changes. Experiences show that transit investments do not create new regional growth but rather redistribute growth that would have occurred regardless.<sup>32</sup>

Later extensions north of downtown, notably along the Mission Valley corridor, were an entirely different story (see Photo 9.1). North County was abuzz with real-estate construction when the Mission Valley rail extension and Coaster commuter-rail line broke ground in the mid-1990s. Thus, unlike with the Tijuana Trolley, transit was poised to channel land-use changes in these two areas. The Mission Valley extension, moreover, represented a change in the

thinking of the region's transit decision-makers. Rather than trying to minimize cost, the mindset became one of maximizing development potential. As discussed in Chapter 19, this was part of a larger smart-growth agenda that sought to put the region on a more sustainable pathway. The Mission Valley light-rail line became the region's model for transit-oriented growth. The line crosses the San Diego River three times in order to site development on the flat valley floor and preserve the sensitive hillsides that define the valley. Helping to lead the way was the city of San Diego's progressive TOD ordinance that incentivizes compact, infill development near Trolley stops (see Chapter 4). These efforts paid off. Between 1982 (when the Trolley extension was first proposed) and 1995, the Mission Valley saw the addition of 7,000 new housing units, 2,375 new hotel rooms, 1.6 million square feet of retail space, and some 6 million square feet of office inventory.<sup>33</sup> Since 1995, these figures have trended steadily upward.

The impact of this "about-face" in policy is clearly reflected by differences in land-value impacts. A hedonic price model was estimated for each of San Diego's transit lines using real-estate sales transaction data from Metroscan, a proprietary database available from First American Real Estate Solutions. For commercial properties (including offices, retail, restaurants, and hotels), data were acquired for calendar years 1999, 2000, and 2001. Models were also estimated for residential parcels based on Metroscan data from the year 2000. Combining sales transaction data with information on site (e.g., building size and quality), transportation (e.g., highway



**Map 9.1. San Diego Rail Systems: Existing and Planned Light-Rail “Trolley” Extensions (Blue and Orange Lines) and Coaster Commuter-Rail Line.**

*Source:* San Diego Metropolitan Transit Development Board.



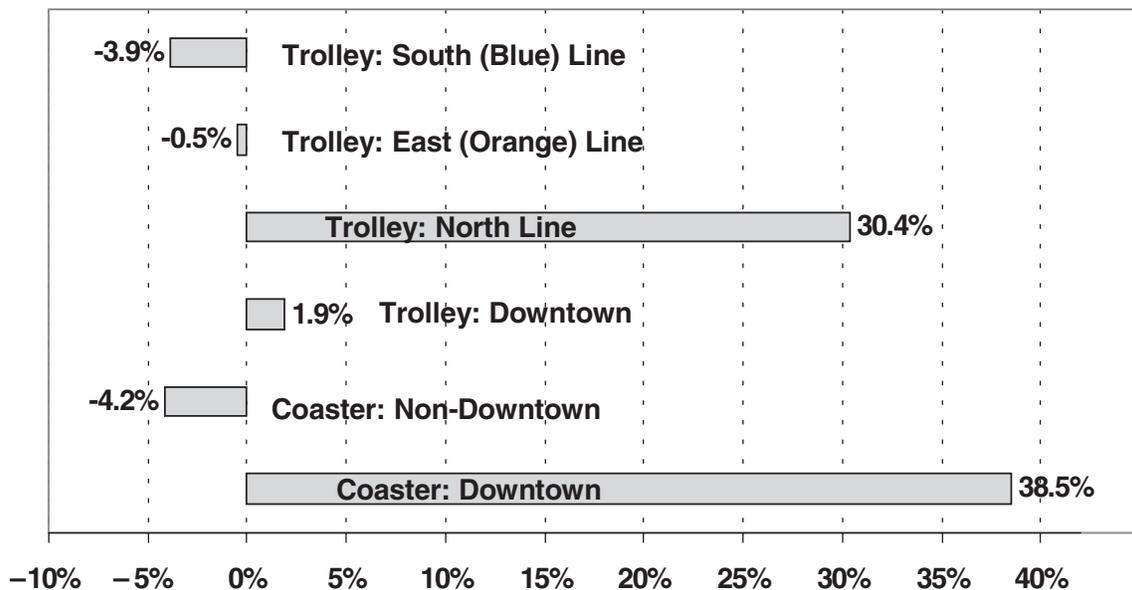
**Photo 9.1. Contrasting Land-Use Outcomes Along San Diego's Trolley Corridor.** The top photo shows an inhospitable setting for land-use changes along the former freight corridor where the South Line operates between downtown San Diego and the Mexican border. The bottom photo shows the substantial amount of moderately dense housing recently built along the Mission Valley light-rail corridor, due in part to proactive planning by the city of San Diego.

travel times), and neighborhood characteristics of each parcel, hedonic price models enabled the added or discounted value from being near transit stops, to be netted out.<sup>34</sup>

Figure 9.2 shows the recorded land-value premiums or discounts for commercial properties broken down by rail line, including the Coaster commuter-rail service that connects downtown San Diego to the northern part of the county. Premiums represent percentage differences attributable to being near transit for “typical” commercial properties within ½ mile of a Trolley or Coaster stop, holding all other factors constant. “Typical” means the average characteristics of commercial property in the database (e.g., the average commercial structure was an office building of 6,600 square feet in size in a neighborhood with seven workers per acre. Figure 9.2 reveals that offices, retail

establishments, restaurants, and other commercial facilities near Mission Valley Trolley stops and the downtown Coaster station enjoyed huge premiums, in the 30%-to-40% range. Both settings have benefited from proactive TOD planning, including targeted public infrastructure improvements (e.g., sidewalk upgrades and public landscaping), overlay zones to encourage mixed uses, and streamlining of building reviews. In contrast, there was a disbenefit, or land-value discount, associated with parcels near Trolley stops on the South Line. Where the commercial real-estate market was strong and proactive planning took place, premiums were appreciable. Where the market was soft and little effort was made to promote TOD, premiums were nonexistent, and some discounts occurred.

For the housing sector, premiums were recorded for multifamily units and condominiums across all Trolley lines.



**Figure 9.2. Commercial Land-Value Premiums or Discounts in San Diego County, by Rail Line.**

Source: R. Cervero and M. Duncan, *Land Value Impacts of Rail Transit Services in San Diego County*, report prepared for the National Association of Realtors and the Urban Land Institute (Washington, D.C.: June 2002).

Differences were minimal. In the case of the Coaster commuter-rail line, however, premiums were huge for condominiums (46.1%) and single-family homes (17%). Apparently, owning a condominium or detached home within an easy walk of commuter rail is highly valued among the many professional workers with downtown jobs who live in the North County. Given that Interstate-5 north of downtown San Diego is the region's most congested freeway, many homeowners appear willing to pay a premium—\$85,000 for the typical condominium—to be within easy access of a Coaster station.

Experiences from San Diego County reveal that rail transit is capable of producing appreciable land-value benefits, although this is not automatic and relationships vary by type of land use and corridor. Subregional market characteristics have a bearing on outcomes. In the buoyant North County area, for-sale residential units reap large premiums, and in the healthy Mission Valley corridor and newly refurbished waterfront of downtown, commercial markets seem to flourish in transit's presence. In the soft real-estate market of the South County along the Tijuana Trolley corridor, the opposite holds true.

### **Transit's Added Value and Public Policies**

Some of the land-value premiums associated with being near transit could be due to supportive public policies that are targeted at TODs. At The Commons, in Denver, planned use development (PUD) zoning was a factor in the master-developer's ability to sell portions of the property to individual developers at a premium. In a statistical sense, it is

difficult to separate out the importance of being close to transit stops from public-policy incentives, like zoning bonuses, in explaining land-value increases. In many instances, they are likely to be codependent: zoning incentives are necessary if proximity to transit is to yield dividends, and proximity to transit is necessary if density bonuses and other zoning "perks" are to pay off.

Notwithstanding the statistical challenges, several studies have sought to gauge the importance of public policies and strategic planning in leveraging the accessibility benefits conferred by transit investments. Using data from Washington County, Oregon, (served by Portland's Westside light-rail line), research found that announcements on the planned siting of light-rail stations and the use of zoning tools (e.g., overlays and interim restrictions) to promote TOD induced land-value increases even before the system began operating.<sup>35</sup> A study of TOD planning in Atlanta also found that policies aimed at encouraging more intensive development around stations, including parking waivers and minimum FAR requirements, interacted with proximity to stations to yield rent premiums.<sup>36</sup>

Perhaps the most important public-policy implication of transit's potential to add value is in the financial arena. The existence of land-value premiums provides a potential source of revenue for transit agencies to tap into to help defray capital costs. Value capture makes sense in theory, but it is often difficult to implement in practice. Since the public sector invests taxpayer monies in rail systems, recapturing some of the value-added, one can argue, is equitable

from a societal point of view. Why let a fortunate group of landowners who happen to own property where stations are sited reap huge windfalls, especially when money is so desperately needed to retire capital bonds for expensive rail systems? Besides being equitable, public co-participation in land-value gains can also reduce the kind of land speculation that can drive real-estate prices so high that housing becomes unaffordable, an outcome that subverts the purpose of many TODs.

Recapturing value is particularly important to jump-starting TODs. This is especially true in distressed inner-city settings where a lot of upfront improvements and amenities are often needed to entice private investment. The responsibility often falls on cash-strapped municipalities to take the lead in attracting private capital to rail station areas by “sprucing up” the neighborhood through generous landscaping and sidewalk improvements and, in riskier settings, underwriting land-acquisition costs. All of this takes money, often lots of it. Thus, value capture provides a source of funds not only to help pay off the debt on transit investments but also to cover the cost of upfront ancillary improvements that can help jump-start a TOD.

In America, value capture occurs indirectly through higher property-tax receipts. However, these are largely transfer effects since gains in values of properties near rail stops (due to *relative* improvements in accessibility) are, theoretically at least, offset by losses in property values for sites farther away (due to *relative* decreases in accessibility). Even if there are net gains in property value income, these monies

end up in the general treasury and rarely get channeled back into transit projects, much less TODs. Only through tax income dedicated to transit agencies are tax receipts from land-value gains a bona fide form of value capture.

A more direct means of recapturing value is through joint development, such as air-rights leasing, ground leasing of adjacent agency-owned parcels, or station connection fees. Hong Kong’s rail system covers all of its costs, including interest, from rents produced by land developments around stations and fare receipts. To date, U.S. transit properties have been far more timid in recapturing value, although a few are beginning to move aggressively in this direction.

Presently, WMATA, serving the nation’s capital and the surrounding area, “recaptures” around \$6 million annually in value-added through various lease and interface fee arrangements, a number that is expected to grow markedly in coming years as very large joint development projects, like White Flint, take form. At Chicago’s Union Station, value capture occurs through rent surcharges (see Photo 9.2). Chicago’s RTA receives as much as 24% of gross sales receipts when sales volumes reach certain thresholds. This rent is in addition to common-area charges that cover maintenance expenses.

One of the most direct means of recapturing value is through benefit assessments. Los Angeles’s MTA obtained 9% of the funds used to pay for the \$1.5-billion Red Line subway through special assessments levied against owners of commercial properties in and around subway stations. MTA’s



**Photo 9.2. Chicago's Union Station.** The top photo shows the exterior of the refurbished historic train station. The bottom photo shows an active restaurant and retail activities within the structure.

benefit-assessment program, scheduled to sunset in 2008, was made possible through statutory legislation that granted the agency special access to beneficiary forms of financing. In most cases, a benefit-assessment district can only be formed if the majority of property-owners within the district agree to levy themselves to fund the improvement. While land-owners are often willing to do this to pay for improvements, like sidewalks, that directly abut their properties, getting them to agree to chip in to help finance rail systems or TODs

is more difficult. Convincing property-owners that transit adds value to their land-holdings is further made difficult by the fact that empirical evidence is inconsistent, even in Los Angeles. A recent study used hedonic-price modeling, similar to what was discussed above for Santa Clara County and San Diego, to net out the effects of proximity to rail lines (heavy rail, light rail, and commuter rail) as well as BRT (MetroRapid) services in Los Angeles County.<sup>37</sup> Appreciable land-value premiums (6.1%) were found around

Red Line subway stations for multifamily housing units; however, land-value discounts, or disbenefits, were measured around Red Line stations for commercial-office properties and condominiums. Premiums were found for these uses along some, but not all, Metrolink commuter-rail, light-rail, and even BRT stops. A confounding factor that might have depressed land values for commercial parcels near some Red Line stations is that many of these stations lie in redevelopment districts. Being in a distressed inner-city setting could have suppressed real-estate values near some subway stations, regardless of transit's presence. Nonetheless, the lack of a consistent pattern of land-value premiums makes it difficult to implement benefit-assessment financing in practice. The rational nexus doctrine that courts apply in weighing whether benefits have been conferred by public infrastructure sets a high standard that transit investments cannot always meet.

Lastly, value capture can also occur through land acquisition and banking aimed at securing profits through long-term leases or even fee-simple sales (i.e., real-estate development on the part of the transit-service provider). This is how the first generation of U.S. streetcar lines from a century ago were built and continues today to be how the majority of suburban rail lines in large Japanese cities are funded.<sup>38</sup> The reduction in federal contributions to new rail starts (from 80% to 50%) and increased competition for the shrinking pot have prompted more and more localities to think in entrepreneurial terms. In contributing some \$28 million toward the \$125-million price tag for the light-rail extension to Portland's International Airport, Bechtel Enterprises, in

partnership with Trammell Crow, is hoping to recoup its cost and then some by developing a 120-acre mixed-use TOD at the Cascade Station. The Pasadena Construction Authority, franchised to build the recently opened Gold Line to Pasadena, hopes to recapture around \$30 million of the capital cost of this extension by developing excess property obtained during right-of-way acquisition.

### **Summary and Conclusion**

The weight of evidence to date shows that development near transit stops enjoys land-value premiums and generally out-performs competitive markets. This generally holds for residential housing (especially condominiums and rental units) as well as office, retail, and other commercial facilities. However, the payoffs are not automatic, and quite often a number of preconditions must be in place. One precondition is an upswing in the economy, with plentiful demand for real estate. Another is that traffic congestion is getting worse. Only then will there be market pressures to bid up land prices and a clear benefit to having good rail access: it provides an alternative to fighting highway traffic. Also important are public policies, such as zoning bonuses, which further leverage the TOD and system expansion that produces the spillover benefits of a highly integrated network. Moreover, if significant premiums are to accrue, it is important that transit be in a neighborhood free from signs of stagnation or distress that has a reasonably healthy real-estate market. In San Diego, premiums were recorded for commercial properties in the Mission Valley corridor, an area that has

generally enjoyed sustained growth over the past decade. Pro-development policies introduced by local governments, like overlay zoning to encourage mixed land uses and targeted infrastructure investments, bolstered commercial property values in the Mission Valley corridor. This stands in marked contrast to the South Line where little effort has been made to leverage TOD, in large part because of stagnant growth, and, predictably, no meaningful land-use changes have occurred.

Insights into the property value impacts of TODs carry policy significance. For one, public entities are in a position to recapture some of the value added through benefit assessments, land acquisitions and re-sales, and ground/air-rights leases. Some areas, such as the Washington (D.C.) Metropolitan Area, Los Angeles, and Portland, have been particularly aggressive in recapturing some of the value created by transit investments; however, legal and institutional concerns continue to impede progress in this area.

Because TODs take time to evolve, experiences suggest that land-value benefits take time to accrue as well. This was underscored by experiences in Santa Clara County, where in the transit system's infancy, no measurable land-value premiums were found, but by the system's 10th anniversary, when the real-estate market had revved up, benefits were appreciable. Savvy developers increasingly understand the long-term nature of profiting from TOD. In the words of one active TOD developer in the Denver region: "we're not here to 'flip' properties in the search for quick profits; with TOD and infill in general, we're in it for the long haul."

More and more, developers are using long-term pro forma when evaluating the potential payoff of TOD. Like any long-term investment, asset management is essential to reaping handsome profits. For this, the public sector needs to do its part to ensure that transit-served neighborhoods are, and will continue to be, viable places. Through effective partnerships with transit agencies, local government, and others—and under the right conditions—all parties are in a position to reap the financial gains conferred by well-planned and well-managed TOD.

## Notes

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